

# SUBSTITUTE-LETTER TRANSPOSALS OF AEINRST

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Earlier issues of Word Ways have demonstrated the fecundity of the seven-letter group AEINRST when it comes to transposals. My August 1998 article offered 155 transposals of these letters, a November 1999 Colloquy added a further four transposals, and my February 2000 article offered another 23 transposals found on the Internet. There were 181 transposals in all in those three items; RE-SATIN was included as a coinage in the original 155, and confirmed as a genuine word in the 23 Internet transposals.

I recently set to wondering about the substitute-letter transposals of AEINRST. A substitute-letter transposal is where one letter is substituted for another, and the new set of letters rearranged to form a new word. For example, consider the word DICTIONARY. Replace one of the I's with an S, and rearrange the letters to form the new word SYNDICATOR. So, DICTIONARY and SYNDICATOR are substitute-letter transposals.

As for AEINRST, I wondered if it were possible to substitute each of the 25 remaining letters of the alphabet in turn for each of the seven letters of AEINRST. For how many of the resultant 175 letter combinations did real words exist? It seemed unlikely that I could find a complete set of words because of potential problems with the difficult letters J, Q, X and Z. Even so, I was already aware of the familiar Scrabble word QUINTARS.

My first task was to fill in the easy gaps, words that should be familiar to most competent Scrabble players. Using the Scrabble software LeXpert, I filled 129 of the 175 gaps. These ranged from familiar everyday words, such as ARTISAN, CERTAIN and TRAINEE, to the more esoteric items that hardened Scrabble players would be familiar with, such as ENTASIA, ATERIN and STHENIA. How about the remaining 46 gaps—what success would I have filling these?

My next efforts were directed at Webster's Third New International Dictionary, recently celebrating its fortieth birthday. Eleven additional items were discovered:

- S+A ATERIAN, a culture of northern Africa
- T+A ANSARIE, member of a religious sect of northern Syria
- T+B ABRINES, a toxic amino acid obtained from jequirity
- A+I TIERS-IN, textile workers who tie in new threads
- E+I INTARSI, types of mosaic
- T+U ANURIES, absences of tails
- S+V AVERTIN, a trademark used for an anesthetic
- E+W RITWANS, Indians of northern California
- T+W NEWARIS, languages of Nepal
- E+Y NRITYAS, dances of southern India
- S+Z RETZINA, a variant of *retsina*, a Greek wine



A pretty cosmopolitan bunch of words! Some of these are spelled with initial capital letters, a property I chose to ignore in this article. One of these items requires improvements, the hyphenated TIERS-IN. I was now up to 140 items out of the 175 sought.

Onwards to the Oxford English Dictionary. Detailed examination of the OED unearthed a further sixteen items:

- A+B BERTINS, the -s form of *bertin*, obsolete form of *britten*, to cut, slay or butcher
- A+J TRISJEN, Dutch word meaning 'to hoist' (etymology of OED *trice*)
- E+F TRAFINS, plural of *trafin*, 17th century form of *trephine*, a medical implement
- E+K KINTRAS, plural of *kintra*, a Scots form of *country*
- E+N NITRANS, plural of *nitran*, a suggested name for the chemical radical NO<sub>3</sub>
- E+R TIRRANS, the plural of *tirran*, a Scots form of *tyrant*
- E+V SIRVANT, a 14-16th century spelling of *servant*
- I+F FARNETS, bands of attendants
- N+J AIR-JETS, jets of air (see 1964 quote at OED *trans*-)
- N+U SAUTRIE, a 14-16 century spelling of *psaltery*
- N+Y RAYIEST, a possible superlative form of the adjective *rayie*, ray-like
- N+Z RAZIEST, a possible superlative form of the adjective *razie*, racy
- S+Y YAIR-NET, a long net with poles for catching fish
- T+E ARISENE, obsolete form of *arisen* (see 1000 and c1175 quotes at OED *arisen*)
- T+Y YAIRNES, the -s form of *yairne*, a 16th century Scots spelling of *yearn*
- T+Z RAZINES, an obsolete spelling of *raisins*

As ever, venturing into the OED throws up a glut of obsolete and Scots spellings! These sixteen items bring my total up to 156—still another 19 to go.

Parenthetically, I note that NITRAN is also given in Funk & Wagnalls New Standard Dictionary (1945) and the Century Dictionary, though it doesn't seem to have made it into any of the unabridged Merriam-Websters.

One further item was uncovered in Webster's Biographical Dictionary:

- A+R STIRNER, Max Stirner, a German philosopher 1806-1856

Another item was tracked down in the Concise German Dictionary contained in the Random House Dictionary:

- A+Z RITZENS, the citation form plural of German *Ritzen*, itself the plural of *Ritze*, a crack

Since my original AEINRST article contained items with the -in' ending (short for -ing), I felt justified in including such a specimen here. The common word YEAST can exist as a verb, hence YEASTING, hence YEASTIN':

- R+Y YEASTIN', fermenting (more accurately, fermentin')

These last three items bring my total up to 159, still 16 short. The missing ones are AEINQRS, AEINQRT, AEINQST, AEINRSX, AEINRTX, AEIQRST, AEIRSTX, AEJNRST, AENQRST, AENRSTX, AENRSTZ, AIJNRST, AINRSTX, AINRSTZ, EINQRST and EINRSTX.



My results are summarized in the table below. OED items are labeled \*, Webster's Third are labeled +, Webster's Biographical are labeled #, Random House are labeled @, and coined words are labeled -.

	-A	-E	-I	-N	-R	-S	-T
+A	-----	ARTISAN	ANESTRA	ASTERIA	ENTASIA	ATERIAN+	ANSARIE+
+B	BERTINS*	BRISANT	BANTERS	BAITERS	BASINET	ATEBRIN	ABRINES+
+C	CISTERN	NARCISS	TRANCES	RACIEST	CINEAST	CERTAIN	ARSENIC
+D	TINDERS	INDARTS	STANDER	ASTRIDE	INSTEAD	TRAINED	SARDINE
+E	ENTRIES	-----	EARNEST	SERIATE	ETESIAN	TRAINEE	ARISENE*
+F	SNIFTER	TRAFINS*	FARNETS*	FAIREST	FAINEST	FAINTER	INFARES
+G	RESTING	STARING	STRANGE	GAITERS	SEATING	GRANITE	ERASING
+H	HINTERS	TARNISH	ANTHERS	HASTIER	STHENIA	HAIRNET	HERNIAS
+I	TIERSIN+	INTARSI+	-----	AIRIEST	ISATINE	INERTIA	SENARII
+J	TRISJEN*			AIRJETS*	TAJINES	NARTJIE	INJERAS
+K	STINKER	KINTRAS*	TANKERS	ARKITES	INTAKES	KERATIN	SNAKIER
+L	LINTERS	RATLINS	ANTLERS	RETAILS	SALIENT	RELIANT	NAILERS
+M	MINSTER	MARTINS	SMARTEN	MISRATE	INMATES	MINARET	SEMINAR
+N	TINNERS	NITRANS*	TANNERS	-----	STANINE	ENTRAIN	INSNARE
+O	ORIENTS	RATIONS	SENATOR	OTARIES	ATONIES	OTARINE	ERASION
+P	NIPTERS	SPIRANT	PARENTS	TRAIPSE	SAPIENT	PAINTER	PANIERS
+Q		QINTARS					
+R	STIRNER#	TIRRANS*	RANTERS	TARSIER	-----	TERRAIN	SIERRAN
+S	INSERTS	STRAINS	SARSNET	SATIRES	ENTASIS	-----	ARSINES
+T	TINTERS	TRANSIT	NATTERS	ARTISTE	INSTATE	NITRATE	-----
+U	UNITERS	NUTRIAS	SAUNTER	SAUTRIE*	AUNTIES	URINATE	ANURIES+
+V	INVERTS	SIRVANT*	SERVANT	VERITAS	NATIVES	AVERTIN+	RAVINES
+W	WINTERS	RITWANS+	WANTERS	WAISTER	TAWNIES	TINWARE	NEWARIS+
+X					ANTISEX		
+Y	SINTERY	NRITYAS+	TRAYNES	RAYIEST*	YEASTIN-	YAIRNET*	YAIRNES*
+Z	RITZENS@			RAZIEST*	ZANIEST	RETZINA+	RAZINES*